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PRIVATE & SOCIAL COST IN RETAIL DISTRIBUTION

In attempting to ascertain the relative merits of large- and small-scale distribution, the difficulty is not so much one of finding the right questions to ask, as of asking them in a form which will enable answers to be made from the data at our disposal. In the following study we are concerned neither with ability to survive nor with net profit rates,[1] but with 'that marketing system which performs the necessary functions of processing and distribution at the least possible cost in terms of human and material resources. The ultimate objectives in distribution are—or ought to be—narrower marketing spreads and reduced prices to consumers, so long as these ends are obtained without the sacrifice of useful marketing services '.[2]

The question-begging character of ' necessary ' function, and ' useful marketing services ' is at once apparent. In our more limited enquiry, where the choice lies between only two alternatives, the same difficulties arise, though in less abstract form. In the first place, is it possible to define the services of the retailer so unambiguously as to permit comparison of the costs of their performance by different sizes and types of retail outlet ? The extent of the services provided by the retailer varies within very wide limits. It is affected necessarily by the kind of merchandise in which he deals ; some goods, for example, require more storage space, have higher rates of depreciation or obsolescence, demand the services of highly-skilled salesmen, or require some degree of processing[3] before sale to the final consumer. The amount of ' luxury ' services incidental to the pure exchange transaction will likewise vary widely with the class of trade, and the spatial distribution of consumers.

The second difficulty arises from the interaction of the form of retail organisation not only with the costs of providing a given retail service, but also with the costs of the whole distributive process from manufacturer to final consumer, and with the costs of manufacture itself. It is likely, for example, that the lower price quotations obtained by chain stores result not only from monopsonistic advantages and a shortening of the distribution process, but also from the real reductions in costs given by large, regular orders for standardised products. A complete analysis of distributive costs would therefore include a study of the relation between retail and wholesale margins and costs of production. We shall, however, content ourselves with examining the factors which determine what proportion of the final consumer's payment is absorbed in retail margins.

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[1] Contrast 'The Changing Pattern of Retail Distribution' and 'Size and Success in Retail Distribution' ; BULLETIN, Vol. 8, No. 8 and 10.

[2] T.N.E.C., Document 35.

[3] This is strictly a cost of production, but is included in the distribution costs. It illustrates well the difficulty of strict demarcation in practice between ' production ' and ' distribution ' costs.

Retail margin (the Percentage Gross Margin of our previous article) is subject here to the same difficulties as were noted before, namely that, being measured conventionally as a percentage of retail price, a given absolute margin will be higher in those enterprises which enjoy some monopolistic advantages in the price of their products, or monopsonistic advantage in the purchase of their stocks.

From the consumer's standpoint the optimum Retail Margin is the lowest possible value for the provision of a given quantum of services. In practice the only measures of the quantity and quality of these services lies in the size of the individual expense items which combine to form total costs. If we attempt to use the size of these individual operating costs as a measure of the relative efficiency of different sizes of enterprise, the enterprises compared must be sufficiently homogeneous to eliminate the effects upon operating costs of widely different services.

The services provided by a retailer may be grouped into three broad divisions. Of these the first consists in the holding of stocks. This combines pure warehousing with a selective function which overlaps the third function. The second consists of the transference to the consumer of a portion of that stock. This may mean no more than the mere exchange of commodity against cash in surroundings which make no concessions to the consumer. At the other end of the scale, it may involve the most elaborate facilities of convenience and comfort, including the delivery of purchases, and even of consumers themselves.[1] The third function consists in providing consumers with information of the range, characteristics, and merits of goods available. The retailer may provide too, though not always deliberately, a liaison between consumer and producer, conveying information of the former's changing tastes.

The size of the Retail Margin will depend, *ceteris paribus*, upon the amount and quality of these three groups of services furnished to the consumer. While the individual retailer is free to increase their amount, the limit below which he cannot diminish them without altogether ceasing to be a retailer is set by conditions outside his control.[2] These conditions are, broadly speaking, the characteristics of the merchandise required by consumers, and the characteristics of the conjuncture (locality, class of trade, etc.) in which the retailing service is performed.

The kind of merchandise sold has its effect upon Operating Expenses, and hence upon Retail Margin in various ways. The direct costs of stock-holding vary with the bulk of merchandise in relation to its value, and to its susceptibility to damage from handling, etc. Other holding costs depend upon the relation between the rate of stockturn and the rate of physical deterioration and obsolescence; they amount, in fact, to the interest charges on capital invested in stocks, plus a premium to cover the risks of capital depreciation. If the rate of stockturn is high, interest charges per unit of sales will be low; similarly, for a given rate of obsolescence over time, the risk premiums will vary inversely with the rate of stockturn. Some indication of the range of variation in rate of stockturn between different kinds of merchandise is given in the following table.

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[1] A department store in a certain North of England city habitually runs a daily bus service to and from outlying districts at considerably reduced fares, partly as a convenience for existing customers, partly as an attraction to potential customers.

[2] A *single* retailer is, of course, free to change the kind of merchandise he sells, or the location of his shop and therefore to change his costs, but the necessary costs of retail distribution as a *whole* are largely given by the proportions in which various kinds of merchandise are sold, and by the existing distribution of the consuming population.

TABLE I

Rate of Stockturn by kind of merchandise.

Kind of Merchandise.	*Rate of Stockturn.*
Food Group	18.10
Automobile group (including filling stations)	10.76
Restaurants and eating places	5.08
General merchandise group	5.05
' Other ' retail stores (unclassified)	4.75
Lumber and building yards	4.73
General stores	4.71
Furniture and household group	4.21
Apparel group	4.16
Secondhand stores	3.33

Source : 15th Census of U.S. 1930, Retail Distribution, Part 1.

Now, low rates of stockturn may arise from the indivisibility of stocks, *i.e.* the minimum stock necessary to do business at all may be very large—or from a high average value of sales transactions (*e.g.* furniture) which limits the number of potential customers per unit time in a given area.[1]

The highest costs of holding stocks will therefore be in those kinds of merchandise which are at once bulky, valuable and subject to rapid depreciation. This is borne out by the comparison of operating costs and rate of stockturn in Table 2, which is confirmed by similar comparisons in all the data examined.

TABLE II

Operating Costs and Rate of Stockturn by kind of merchandise.

Kind of Merchandise.	*Operating Costs as % of sales.*	*Rate of Stockturn.*
Jewellery	39.6	0.9
Shoes	27.4	1.9
General stationery	33.5	2.5
Commercial stationery	33.6	2.8
Tyres	25.5	4.5
Grocery	18.0	10.0

Source : McNair, op. cit.

Retailing, however, seldom consists of a pure exchange of goods for money; the majority of transactions include more or less services by the retailer. Bulky goods, for example, cannot readily be carried away by the customer, personal goods require to be fitted, and other goods of a technical character need to be accompanied by explanation and promise of future service. The nature of the merchandise sold affects the degree of ability and training called for in the sales-personnel, and hence their remuneration. Certain chain stores have succeeded in reducing the selling transactions to such tasks as can be performed by unskilled, and often casual, labour. These attempts to carry specialisation to extremes have resulted in the U.S.A., in the developments of ' supermarkets ' or ' self-serve ' retail stores, whose resultant reduction in wages-costs does enable them to lower prices. But so far, the range of merchandise they cover is limited to highly standardised products of small bulk. Complete mechanisation of the selling transaction is still confined to slot machines and ' automat ' restaurants, and may be dismissed as unimportant.

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[1] *i.e.* either the denominator of the ratio *Sales to Stocks* (the rate of stockturn) may be arge, or the numerator small.

It has already been remarked that the desires of consumers for the more or less elaborate forms of services increase with income. In retailing, unlike production, the material with which the labour force (the sales personnel) has to work is neither uniform nor inert, but variegated, human material; this sets the boundary to standardisation of the selling transaction. The greater the variety of merchandise and the more complicated the individual items handled by one salesman, the greater must be his individual training and skill, if a given level of service is to be maintained. In stores with a greater physical volume of sales[1] greater division of labour is possible and economies arising from specialisation can be achieved.

Consideration of the size of the circle of potential customers introduces the second necessary factor affecting Retail Margin, namely the framework within which the retail store is operating. In the comparison of efficiency this is, without doubt, the most troublesome factor to isolate.

Locality will have its effects upon total expenses mainly through differences in Rent, Wages, Rate of Stock-turn, and amount of unavoidable services. All but the last of these can be measured. But how far the extra expenses involved in retailing, for example, in an area of scattered farms, actually appear in the retailer's expense sheet cannot easily be known. The costs of delivery may be borne entirely by the consumers in the form of their travelling costs.[2] On the other hand, the costs may be shifted on to the community at large; this is in fact done by the mail order houses, which could not deliver their goods to their customers, living mainly in scattered non-urban areas, at the same charge as that made by State postal services serving all areas on a non-discriminatory basis.

It is not proposed to examine in detail the effects of locality upon the size of the retail margin; it is sufficient to note from Table 3 that in small cities, despite the smaller average size of stores, operating costs are smaller than in large cities.

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[1] This usually means a larger circle of potential customers, and a certain minimum scale of operation. Department stores who practice such division of labour most thoroughly, do not normally operate in cities of less than a certain size.

[2] This involves no real shift in the incidence of these costs, which would in any event be borne by consumers as a whole ; individual consumers who do not transport their purchases will actually bear less than their fair share of the extra costs.

TABLE III

Size and Operating Costs of all stores in three sizes of city in the United States (1929).

	Size of City (No. of inhabitants).		
	More than 30,000	10,000 to 30,000	Less than 10,000
Size (Annual Net Sales $)	41,700	35,300	21,300
Operating Costs (inclusive of imputed proprietor's compensation) as a percentage of sales	27.7	23.7	20.2

Source: 15th Census of U.S. 1930 Retail Distribution, Part 1.

In this enquiry the nature of the material has not always permitted us to be sure that in comparisons of different sizes of store, these stores were in every other respect, and particularly in respect of the quantity of services, homogeneous. It is impossible to evaluate social performance in retail distribution without drawing a distinction between necessary and unnecessary services; the purpose of the immediately foregoing analysis was to show how difficult this distinction is to maintain.

With this qualification in mind, we now attempt to use the conclusions of the previous article[1] as a basis for a brief evaluation of ' social efficiency ' in retail trading.

On the score of cost of distribution ' in terms of human and material resources ' the larger stores and organisations are superior, perhaps more so than a simple comparison of operating costs would imply. For previous analyses of cost have been made in terms of monetary cost. Although useful for their purpose (which was the measurement of Profits) such analyses do not always distinguish between the amounts of labour and capital used and their respective rates of reward. The fact that many retail (and indeed other) businesses survive only because their proprietors and employees are willing to work long hours or at low rates of pay is no real evidence of their efficiency. For there is ample evidence to show that rates of remuneration, so far as concerns employees, are higher in large than small stores, and also higher in chain than independent stores.[2] Since the larger stores are more likely to be situated in the bigger cities, and their employees better organised, this is hardly surprising, though of course the relative difference in wages per employee is by no means so great as the difference in their respective productivities, as measured by sales per employee.

If the difference in rates of remuneration (for the performance of the same services) were eliminated by the imputation to large and small enterprises alike of the same average wages per employee, then the gap between the wage expenses (as a proportion of sales) of the large and small enterprises would merely be widened to the advantage of the larger units. In respect of quantity and quality of manpower directly employed to sell a given amount of goods, there can be no doubt which size of enterprise is the more economical. The importance of economies in manpower is emphasised by the fact that in Britain each retail outlet serves on the average not more than 25 families,[1] and in order to do this maintains considerable excess capacity.[2]

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[1] BULLETIN, Vol. 8, No. 10, p. 338 (note 1).

[2] *Cf.* Census of Distribution for Eire and for Canada. The T.N.E.C. Investigation into the concentration of Economic Power, basing itself on U.S. Census data, criticises the conclusion of the Federal Chain Commission on Chain Stores (which pointed to lower remuneration in chains) on grounds of restricted samples.

The increased productivity of the directly employed manpower in large enterprises does not appear, as we have previously shown, to depend upon an increased ratio of capital to labour; large-scale distribution is not therefore more expensive in consumption of indirect manpower embodied in stocks and fixed equipment. These two conclusions are nothing more than the translation into manpower terms (after adjustment for differences in the rate of remuneration) of previous conclusions that the sum of wages and capital expenses, as a proportion of sales, decreases with size.

The matter cannot however be satisfactorily left there. It is one thing to say that because a large store has lower operating costs it can provide a bigger volume of services at the same price, and quite another to say that a store succeeds in being large because it has lower operating costs and can therefore spend more upon attracting and holding customers from elsewhere. In conditions where competition takes mainly the form of price reduction, customers would be able to decide for themselves whether the inconveniences of one centrally located store were offset by the price reductions which economies of scale made possible. When price competition has been replaced by product competition, as is substantially the case in present day retail trade, the customer is not able to make such a choice; though as we have shown by consumer reactions to the lower prices of the chains, and more recently of the supermarkets, there is at least a large minority of consumers who, given the choice, would prefer lower prices to increased services.

In short, there is little to be said in favour of a trend towards larger units if it is accompanied, as in part it has been, by a rise in retail margins; for this has the double effect of making small-scale operation more profitable and further multiplying the number of retail outlets, and hence of increasing the difficulty with which large stores maintain their sales and indeed stimulating them to further advertisement expenditure.

The cost of distribution is a combination of the private costs of distribution, which it has been the primary function of this enquiry to examine, and of the social costs to the consumer. About the effects of an increase in the average sizes of store (and hence a decrease in the number of stores) upon the amount of social costs too little is known to make speculation worthwhile; but it would, for example, be arguable that the purchase of ' shopping goods ' in a large department store or shopping centre is a positive entertainment to which the costs of transport are merely the price of admission. To the town planner faced with the problem of locating shops de novo, these would be important considerations; but the necessary data could not be discovered without a large-scale social survey, and hence are outside our present scope.

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[1] Taking the most conservative pre-war estimate of 500,000 outlets, and assuming an average family of three persons.

[2] It has been estimated that in Sweden 40 per cent of the week's retail sales are made on Saturday morning, and, especially in working-class areas, a further considerable percentage in the one hour before closing time on Friday (Lind : *Statistical Investigations into the Economy of Retailing*). It seems unlikely that the staff required to cope successfully with these peak periods could be fully engaged during the rest of the week.

R. Bellamy.

A NEW INDEX NUMBER OF BUILDING MATERIALS' PRICES

The Need for a New Index

One of the key figures in discussions on housing and building costs is the average percentage change in the cost of building materials. There are several index numbers compiled, of which the best known is that of the Board of Trade. The Board of Trade index is based on 22 quotations. The weights on which it is worked out were chosen as appropriate to all building work done in 1930. The weights are :—

Iron and steel	3
Timber	2
Paint	3
Bricks and other clay products	2
Slates and tiles	1
Cement, sand, lime	2
Stone	1
Glass	1
Lead and earthenware	1
Total	16

The Board of Trade index gives the geometric mean of the percentage changes in price.

For various reasons, it seemed useful to construct a new index of building material prices.[1] Firstly, many items, and classes of item, are unrepresented in the Board of Trade index, and also in non-official index-numbers. Secondly, weights more appropriate to up-to-date conditions give an index greater relevance to present-day problems. Thirdly, sometimes it is more appropriate to study changes in an aggregate index than in a geometrical average of price movements. Each of these three points has been met in the new index shown below.

Quotations Used

Forty-four price quotations have been used. They include the following commodities : bricks, cement, timber, lime, roofing tiles, roofing slates, patent plasters, sanitary ware, drain pipes, heavy steel products, asbestos cement pipes and roofing sheets, cast iron pipes, heavy tubes and bends, lead piping, galvanised corrugated roofing sheets, glass, paint, hardcore and aggregate, locks, screws, wire nails, ball valves, hot and cold water tanks, slow combustion stoves, manhole covers, glazed tiles, roofing felts, granite chippings, and linseed oil. For some commodities, such as sanitary ware, several quotations have been used. The sources of the quotations are lists commonly used in the trades concerned, or published in the technical journals.

It should be noted that even these 44 quotations do not form a comprehensive list of all the materials and components used in the Building Industry. Each has been chosen, after consultation with technically informed persons in the building materials' industries, as being reasonably representative of the class of goods concerned. Thus the quotation used for sinks stands for various sizes and types of sink and not only for the particular size and type to which the quotation relates. This is a safe method of approch provided that *changes* in the prices of the different types occur at approximately the same rate as changes in the price actually quoted.

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[1] The construction of the new index number was first given in the *Architectural Journal* of May 1946, whose Editor kindly permitted its reproduction here.

All quotations have been taken from published information recognised in the trades concerned, or from Government publications where prices are officially controlled. In the main, the actual quotations used refer to goods bought in relatively small quantities, but here again there should be no error arising provided that the prices of goods purchased in larger quantities move at the same rate as goods purchased in small quantities. The 44 quotations used are as good a sample as can at present be obtained from published material. By covering many more items than the Board of Trade, allowance has been made for movements in important classes of commodity that otherwise are not included, and the important point in this connection is that the costs of material in a building consist, apart from tiles, timber, steel and cement, of a large number of items, each small in itself, but in total amounting to an appreciable percentage of the cost. Many of these items are the products of separate industries, or branches of industry, and their costs do not necessarily move in harmony with the costs of the heavier materials. Among the 44 quotations are included representative prices for all the important trades and industries that supply materials for building.

WEIGHTS CHOSEN

Two sets of weights have been worked out for the new index numbers. The first set were those appropriate to war-time types of construction; the second set those appropriate to current types of construction in the period July 1945—June 1946. To arrive at the first set of weights a study was made of the war-time outlay on different types of construction, and the war-time output of the principal building materials, as published in *Statistical Tables relating to the Building and Civil Engineering Industries* and the current *Monthly Digest of Statistics*; a similar study was made from the latter source for current outputs.

The weights assigned are based on the proportion which the total gross value of the output of each individual item bears to the value of the output of all the materials included in the index. Although the estimates of gross value of output of materials cannot be very accurately assessed, it is thought that the relative proportions arrived at by studying output and prices and checked in relation to the materials entering into various types of buildings, are reasonably reliable. The resulting weights for the war-time index, as applicable to the price data for 1939, were as follows :—

Asbestos cement rainwater and soil pipes	2.0
Asbestos cement roofing sheets	0.9
Ball valves	0.8
Bricks	6.9
Cast iron rainwater and soil pipes	1.9
Cast iron tubes and bends	1.9
Cement	16.7
Cold-water tanks	0.4
Drain pipes	1.8
Galvanised corrugated roofing shts.	1.6
Glass	2.5
Granite chippings	1.2
Hardcore and aggregate	18.0
Heavy steel products	18.8
Hot-water tanks	0.8
Lead piping	0.8
Lime	1.8
Linseed oil putty	0.7
Locks	0.9
Manhole covers	0.8
Patent plaster	1.0
Paint	5.2
Roofing felt	2.1
Roofing slates	0.8
Roofing tiles	1.7
Sanitary ware	2.4
Screws	1.0
Slow combustion stoves	0.7
Timber	3.1
Wire nails	0.8
Sum of weights	100.0

On the basis of these weights a *War-time Materials Index* has been calculated.

The second set of weights, calculated on the basis of the programme now running (see Tables 72 and 73 of the *Monthly Digest of Statistics*) is the basis of a second index number, starting in the third quarter of 1945, which may be called the *Peace-time Materials Price Index*. The weights are :—

Asbestos cement rainwater and soil pipes	0.6
Asbestos cement roofing sheets	5.8
Ball valves	0.3
Bricks	4.8
Cast-iron rainwater and soil pipes	2.5
Cast-iron tubes and bends	0.6
Ceiling distemper	0.4
Cement	13.8
Cold-water tanks	0.4
Drain pipes	2.3
Galvanised corrugated roofing sheets	0.8
Glass	5.3
Glazed tiles	3.6
Granite chippings	0.3
Hardcore and aggregate	13.5
Heavy steel products	6.0
Hot-water tanks	0.6
Lead piping	0.8
Lime	0.6
Linseed oil putty	0.3
Locks	6.7
Manhole covers	1.1
Paint	7.6
Patent plaster	2.1
Plasterboard	4.7
Roofing felt	2.4
Roofing slates	1.8
Roofing tiles	0.2
Sanitary ware	2.5
Screws	0.4
Slow-combustion stoves	0.2
Timber	6.7
Wire nails	0.3
Sum of weights	100.0

In comparing the peace-time with the war-time weights, it should be borne in mind that the cessation of the runways programme on aerodromes and the construction of hangars, etc., has affected the proportion of cement, and of aggregate and constructional steel needed very considerably. The peace-time weights include an allowance for plasterboard, so the percentages for the other items cannot be quite comparable with the war-time percentages.

The peace-time weights will clearly need revision from time to time, as the housing programme develops, and as more exact knowledge of the proportions of materials actually used in the programme becomes available. The weights chosen for the index are based in 1945 output and consumption of building materials. Production of many materials has since notably increased. Brick production, for instance, has advanced from 50 millions a week in April to 70 millions a week in June. If the current rate of output were the criterion, several of the weights chosen would have to be revised. Bricks would now represent well over 5 per cent of the total, instead of 4.8 per cent, the weight for roofing tiles might have to be increased, and so on. But a new set of weights will not be worked out until the production of materials is steadier, and less lop-sided. This is not likely to occur until 1947.

WAR-TIME AND PEACE-TIME INDEX NUMBERS

The index has been calculated on an 'aggregative' basis, which means that it measures the percentage increase in aggregate outlay necessary for similarly proportioned collections of goods at different dates. Of course, theoretically, the weights should be readjusted every quarter, but it is simpler to readjust the weights only when there are major alterations in the nature of the programme.

The peace-time index, which is also aggregative, differs from the war-time index only in the assumption of a different proportion between the materials used, and the addition of three items.

Interpretation of this index demands special attention to the quantities that are being measured. The rise shown is the percentage increase in outlay that would be incurred by a builder purchasing goods in 1945 as compared with his outlay for the same goods in 1939, and assuming that he bought quantities in proportion roughly equivalent to the total quantities of materials produced in the period 1945–6.

This percentage increase in total outlay is related to published or trade list prices. As stated above, the assumption made is that the builder's purchases will be at prices that have risen commensurately with the rise in the published prices of relatively small quantities and the movement measured is from August 1939 to the middle of each quarter for later years.

In actual fact, published prices for small quantities in 1945 are probably a fair representation of the level of actual prices paid, apart from usual trade discounts for large orders, for cash payments or for collection of materials by the builder's own transport. But the published prices for August 1939 cannot be said to be representative in the same degree. A careful enquiry to firms and local authorities engaged in large-scale purchases in 1939 has shown, although publishable data are not available, that in general the actual prices paid in 1939 were frequently much more favourable to the purchaser than is indicated by the movement we have measured. There were special advantages obtainable by what Adam Smith called the Higgling of the Market. Large orders for bricks or timber were frequently placed at prices well below the listed rates we have had to use as a basis of our index.

If allowance is made for these possibilities, then it would seem that prices delivered to sites in the London area for materials for large-scale housing schemes more than doubled between August 1939 and November 1945. No exact figure can be given but an average of 100—120 per cent increase is commonly quoted. Thus, our Peace-time Index based on price quotations seriously understates the rise that has taken place for the large-scale and more efficient purchasers. Furthermore, an unknown amount of materials changes hands at virtually Black Market prices.

In the absence of regularly available information on prices paid actually on site by contractors, the index number will, however, have to suffice as an indicator of trend, but it should be remembered that a small percentage rise (or fall) in the index may run parallel with a much larger percentage rise or fall in the average prices he has to pay for materials on site owing possibly to changes in discount, credit and delivery allowances.

The War-time Index is as follows :—

(August, 1939=100).

Quarter	1939	1940	1941	1942	1943	1944	1945
1st		109.8	133.9	143.7	147.8	151.7	153.4
2nd		114.9	135.1	144.2	150.0	152.4	156.5
3rd	100.0	122.1	138.8	145.7	150.7	152.9	157.4
4th	107.0	126.9	141.0	147.5	151.6	153.5	

It will be seen from studying this index on the graph that war-time materials' prices rose most steeply in 1940, and thereafter flattened out. The fall of Norway and France, and the cutting off of timber supplies from the most economical sources accounted for the main part of this rise. Cement and brick prices also rose by several points in 1940. There was a continued rise by about 10 points from spring 1941 to spring 1942. The peak of war-time constructional new work was in 1943, and the rate of increase of building materials' prices slowed down in that year. The index advanced by about 3—4 points annually from 1942 to 1945. In the spring of 1945 there was a sharper rise between the first and second quarters than there had been for five years. This was due to rises in the prices of bricks, cement and other items.

The Peace-time Index runs as follows (1939=100) :

Quarter ...	1945	1946
1st ...	—	167.6
2nd ...	—	170.2
3rd ...	160.5	175.8
4th ...	164.2	—

Over the year ending August 1946, the index has risen by over 15 points. This compares with a rise in the war-time index of only 4.5 points for the previous year ending August 1945. Post-war building materials' prices have advanced almost as steeply as prices in the first year of war.

Apart from the increase in delivery charges due to increased cost in rail transport, many important building materials, such as bricks, cement, timber, asbestos roofing sheets, glass, plaster-board, patent plasters, and most items of sanitary ware, were no dearer in August 1946 than in May. The main cause of the rise from May to August must be sought in the sharp increase in the prices of locks, paint, and gravel and ballast : and in rises in the prices of lead piping, manhole covers, slates, iron and steel, drainpipes, and water tanks—the items in this list being arranged in the order of their importance as affecting the index as a whole.

There has been a rise in 20 out of 44 price quotations used in the index, so that it may fairly be described as a general increase.

This rapid rise in the price of building materials may be compared with the rise in the general price level, as indicated by the Board of Trade wholesale price index.[1] Wholesale prices increased steeply during the first few months of the war, and until 1946 (as the graph indicates) the wholesale price index remained above the Board of Trade index number of building materials prices, and also above our wartime and peacetime indices. In other words, between August 1939 and August 1945 the prices of building materials rose (on the whole) less than the general commodity price level. During the past year, however, our index of building materials prices has risen more steeply than the general price index. Between July 1945 and July 1946 the latter advanced from 170.6 to 176.8—that is, by just over 3.6 per cent; during the same period, our peacetime index number went up from 160.5 to 175.8, an increase of approximately 9.5 per cent. The Board of Trade index number of building materials prices rose even more steeply than our own—from 158.6 to 177.7 or about 12 per cent. This rate of advance may be too high, owing to the very heavy weights assigned to paint and timber in the Board of Trade index. But it suggests that the rise indicated by our own index, based as it is on a wider selection of commodities, does not overstate the very considerable increase that has taken place. Our index is near to being a correct average of wholesale building materials' prices for the London area, although, as has been remarked, building materials' prices over the country as a whole may be showing a steeper rise.

Perhaps the main reason for this rapid increase during the past year has been the increase in wages in several of the trades included in our index—for example in brick, tile and pipe manufacture, and in the cement industry. Moreover, the prices of imported timber have increased considerably.

The recent rise in rail charges affects not only delivery costs for building materials but also delivery costs of the fuel and raw materials used in their manufacture, and this will tend to raise prices ex-works proportionally to this increase in prime costs. We must expect, therefore, a further rise in building material prices. When will this tendency be arrested ? After the last war the check came with the general deflationary policy of 1920. In present conditions, and at least for the next few years, a deliberate policy of deflation can be ruled out, and even a setback induced by an American slump is not likely to affect the sheltered building industries to any large extent. On the contrary, if the Government attempts to offset the fall in foreign demand by expanding home demand, the building industries are likely to be the main beneficiaries.

The rise in building prices could nevertheless be retarded if increased output were to lead to cost reductions as the peace-time industries get into their stride. Such economies will not accrue to all building industries, but may, for instance, be expected for some of the manufactured products enter-

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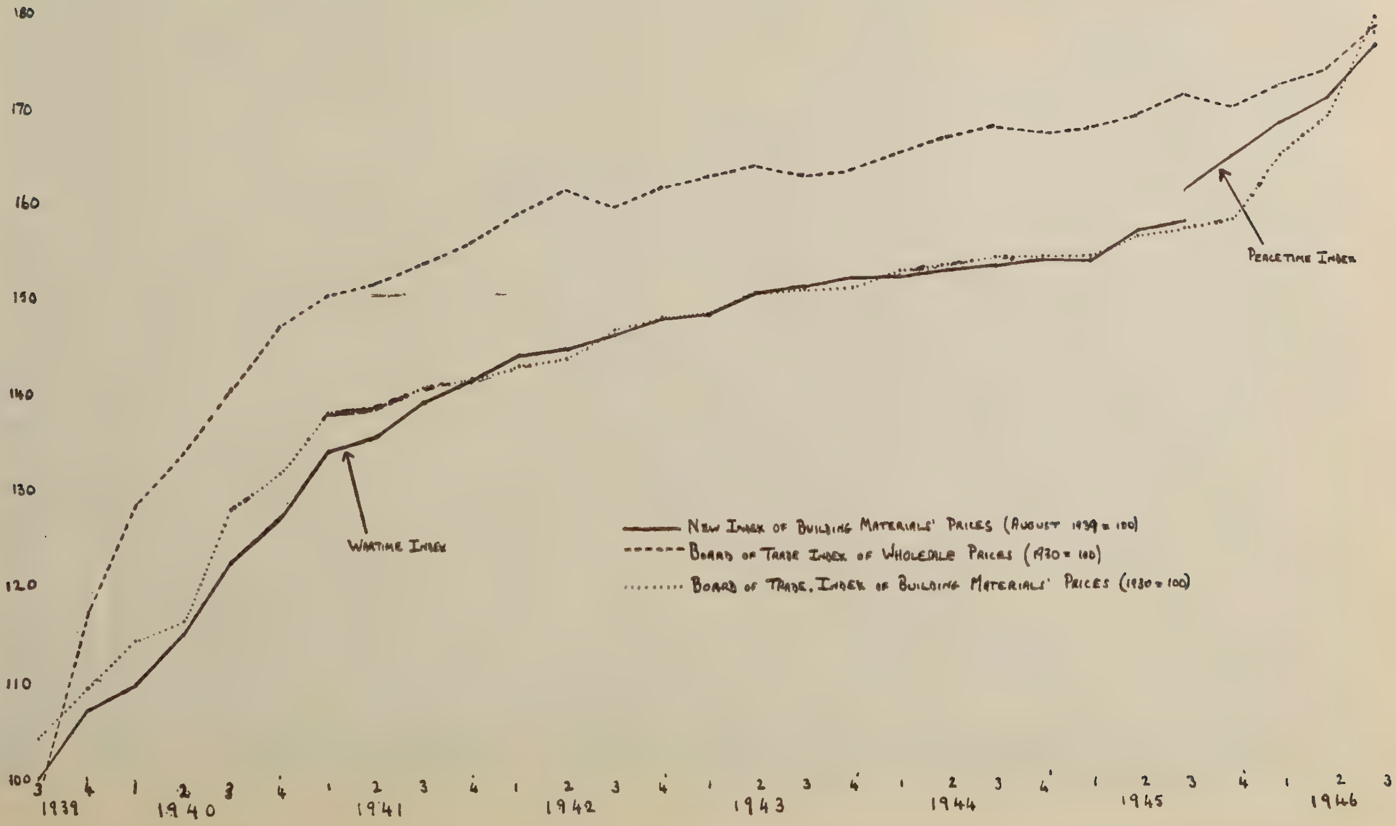
[1] In our own index, we have taken prices at the *beginning* of February, May, August and November as indicative of the trend for each quarter of the year Similarly, in the case of the Board of Trade indices the figures for those months have been taken as representative of the quarterly figures.


180
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3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3
1939
1940
1941
1942
1943
1944
1945
1946
Wartime Index
Peacetime Index
New Index of Building Materials' Prices (August 1939 = 100)
Board of Trade Index of Wholesale Prices (1930 = 100)
Board of Trade. Index of Building Materials' Prices (1930 = 100)

ing the index or for the cement industry as a result of better capacity utilisation. If such reductions in cost are passed on to the consumer the upward pressure of prices will be mitigated and builders will, in the limited field where this is technically possible, tend to substitute the cheaper for the dearer material. But in bottleneck industries working under conditions of monopolistic competition cost reductions are by no means likely to be translated into proportionate price reductions. They will at least in part be used to swell gross profit margins. In this case the Government might enquire into the possibility of price reductions for particular products. This might stimulate the incentive to efficiency. The instrument of bulk purchases could perhaps be used to obtain rebates while guaranteeing at the same time large and continuous orders to low price industries. In addition the Government may have to take direct action to provide technical help and to secure priority allocations of plant and labour to these industries.

Such a policy would certainly at this stage, when reconversion has gone some way, seem to be more practical politics than mere admonition. Nor must it be overlooked that some branches of the building materials industry will not experience a fall in costs as output rises. Where marginal firms are brought into operation as demand and output increase, costs will tend to rise even if wage rates and transport costs remain unchanged. We have no data to determine the range of industries whose expansion over the next two years would make them operate at increasing cost, but it would not be surprising if it held true, for instance, in the case of brick-making. If, however, the expansion of some major building materials industries were associated with increasing real costs, it would need very substantial price reductions in other lines to prevent a sharp rise in the index. Or to put it the other way round, if the Government does not impress upon the industries benefiting from lower costs the need to take a smaller profit on a much larger turnover, the sharp upward turn of prices, which we noted in the last quarter, will continue unabated. This will not only drive up building costs and hence the total of subsidies payable to maintain a reasonable level of rents for new houses, but it will also entail a revision of the ceiling prices for houses which were fixed roughly in relation to the 1945 level of costs, and, last not least, it will increase the costs of repairs and thus diminish the landlords' ability and willingness to maintain their rent-controlled property in a good state of repair.

I. Bowen.

TABULAR APPENDIX.

EDITORIAL NOTE

Tables relating to British economic developments, are given below. As far as possible 1938 is taken as the base year for index numbers. Absolute figures for any year are generally given as monthly or quarterly averages to ensure comparability. Detailed information about the different series can be found in the sources quoted.

Explanation of symbols used.
(. .) — figure is provisional or approximate.
N.A. — figure is not available.
— — figure is negligible.

A. ECONOMIC DEVELOPMENTS IN GREAT BRITAIN.

TABLE I

Employment by Industries in Great Britain.

Million persons employed	Mid 1939	Mid 1943	Mid 1945	1946 May	1946 June	1946 July	1946 Aug.
1. Metal and Chemical Inds.[1]	3.11	5.23	4.35	3.52	3.52	3.51	3.60
(*a*) for Civilian Use	2.04	0.92	1.21	2.96	3.05	3.06	3.18
(*b*) for Supply of Forces	1.07	4.31	3.14	0.56	0.47	0.45	0.42
2. Other Manufactures[1]	3.83	2.62	2.58	2.80	2.81	2.85	2.92
(*a*) for Civilian Use	3.63	1.75	1.82	2.53	2.58	2.66	2.76
(*b*) for Supply of Forces	0.20	0.87	0.76	0.27	0.23	0.19	0.16
Total Manufactures :	*6.94*[3]	*7.85*	*6.93*	*6.64*	*6.66*	*6.68*	*6.85*
% for Civilian Use	81.00	34.00	44.00	87.00	89.00	90.00	91.20
% for Exports	14.2[3]	3.2	6.9	19.6	20.3	20.8	20.6
3. Basic Inds. and Services	4.68	5.03	5.11	5.27	5.30	5.30	5.32
(*a*) Agriculture, Horticulture, etc.	0.91[4]	1.03[3]	1.03[3]	1.02	1.02	1.02	1.02
(*b*) Mining and Quarrying	0.87	0.82	0.80	0.79	0.79	0.79	0.79
(*c*) Transport, Shipping, Fishing	1.27	1.19	1.27[3]	1.40	1.41	1.41	1.42
(*d*) Govt. Service (National & Local)	1.39	1.79	1.82	1.82	1.83	1.83	1.83
4. Building and Civil Engineering	1.31	0.73	0.72	1.12	1.17	1.20	1.23
5. Distributive Trades	2.89	2.01	1.96	2.16	2.21	2.23	2.28
6. Other Services	2.10[3]	1.51	1.49	1.62	1.64	1.65	1.68
Total Employed[2]	17.92[3]	17.12	16.21	16.80	16.97	17.07	17.35

Sources : *Ministry of Labour Gazette* and *Monthly Digest of Statistics*.

[1] Excluding non-manual workers earning over £420.

[2] Including employers and self-employed, but excluding Forces, Auxiliary Services, Civil Defence, Police and private domestic service.

[3] The figures which appeared in previous issues of the BULLETIN have been slightly revised to obtain consistency with the Digest series.

[4] The chief change is in the figures of agricultural workers, whom the Digest defines as those employed on holdings exceeding one acre, excluding the occupier and his wife, schoolchildren and domestic servants.

TABLE II

Regional Distribution of Insured Persons and of Numbers of Registered Unemployed.

	Insured Persons[1] ('000's)			Registered Unemployed[2] ('000's)							
	July 1939	1943	1945	July 1939	July 1943	July 1945	Jan. 1946	Mar. 1946	May 1946	July[4] 1946	Sept. 1946
London and S.E.	3,655	3,024	2,861	170	13.9	11.6	24.5	30.8	34.8	34.7	36.3
Eastern	737	729	676	37	2.3	2.1	8.6	10.4	7.5	6.9	7.9
Southern	629	669	619	43	1.8	1.7	7.7	8.2	8.1	6.9	7.1
S. Western	737	756	698	34	2.0	2.8	9.0	10.1	10.4	9.2	9.6
Midlands	1,501	1,534	1,378	82	2.4	8.1	24.0	21.9	18.5	16.5	14.6
N. Midlands	1,098	1,051	979	71	1.7	2.0	9.3	10.5	7.3	8.0[4]	8.6
E. and W. Ridings[3] ...	1,437	1,333	1,237	121	4.9	6.6	17.1	19.4	19.7	20.0	20.4
N. Western...	2,396	2,250	2,072	286	10.2	13.1	50.5	63.4	70.5	66.1[4]	65.8
Northern	850	832	817	116	7.7	11.7	45.2	50.3	50.9	50.7[4]	48.6
Scotland	1,650	1,555	1,463	190	16.7	22.0	63.7	74.1	75.2	73.9	77.2
Wales	687	721	678	106	9.7	21.3	68.2	69.6	66.9	61.1	57.7
N. Ireland	348	370	358	70	17.2	17.0	30.8	32.5	30.9	32.6	29.9
Total[5]	15,157	14,292	13,300	1,326	91	120.4	360.2	404.4	405.8	391.9	389.1

Source: *Ministry of Labour Gazette.*

[1] Estimated number of persons aged 14 and over insured under the General Scheme and Agricultural Scheme in each Region as constituted in July 1945.

[2] Wholly unemployed persons registered at Employment Exchanges, including casuals and temporarily stopped.

[3] Formerly called the N. Eastern Region.

[4] Figures for July onwards relate to the regions as constituted after the boundary changes of April 1st, 1946. These changes affect unemployment totals only in the North Midlands, North Western and Northern, where July figures on the old basis would be 8.1, 69.8 and 46.9 respectively.

[5] Totals of unemployed include claimants for benefit under the banking and insurance Special Schemes who cannot be allocated to Regions in Great Britain.

TABLE III

Symptoms of Investment Activity in U.K.

Monthly Average rates	1938	1945	1946 1st qtr.	1946 2nd qtr.	1946 3rd qtr.
Output of Cement[1] ('000 tons)	643	338	409	569	595
Index 1938=100	100	52.6	63.6	88.5	92.5
Output of Bricks[2] (million)	610	102	154	265	336
Index 1938=100	100	16.7	25.3	43.4	55.1
Home Deliveries of Steel ('000 tons) ...	818	962	885	914	860
Index 1938=100	100	117.6	107.2	111.7	105.1
Merchant Shipbuilding[3] ('000 gross tons) ...	780[6]	1476	1586	1666	1704
Index 1938=100	100	189.2	203.3	213.6	218.5
Production of Commercial Vehicles[4] (No.) ...	4201	4683	8990	12362	11705
Index 1935=100	100	111.5	214.0	294.3	278.6
Deliveries of Home-Produced Machine tools[5] (£'000)	N.A.	3046	2765	2628	N.A.

Sources : *Accounts Relating to Trade of U.K.* and *Monthly Digest of Statistics.*

[1] Figures relate to nearly all the firms in the industry.
[2] Great Britain.
[3] Under construction at end of period (all ships of 100 gross tons and over, including merchant type vessels built for the Navy).
[4] Including omnibuses, but excluding service vehicles. For the base year 1935, the number of service vehicles cannot be separated.
[5] Revised series, comprising Metal—and Wood-working Machine tools, Electric Motors and Welding Sets, but excluding Metal-working Small Tools, for which figures have been discontinued.
[6] This figure has been taken from Lloyd's Register, and is not strictly comparable with the figures in the rest of the table. The Lloyd's figures refer to U.K. and Eire, and include certain non-propelled lighters.

TABLE IV

Coal Production and Employment.

	1938	1944	1945	1945			1946	
	Quarterly Averages			3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.
Mined Coal—								
Saleable coal produced ('000 tons) ...	56,748	46,025	43,471	39,672	45,029	45,219	44,790	44,823
Av. number of effective[1] wage-earners ('000's)	N.A.	641.6	628.9	592.6	626.6	625.6	641.1	
Opencast Coal[2]								
Saleable coal produced ('000 tons) ...	—	2,162	2,029	2,051	1,971	1,709	2,584	2,479
Av. output per man-shift worked (tons)	1.14	1.00	1.00	0.97	1.02	1.02	1.02	1.01
Av. ditto at the face[3]...	3.00	2.76	2.70	2.65	2.77	2.76	2.75	2.73

Sources : *Ministry of Fuel and Power Statistical Digest and Board of Trade Journal.*

[1] Effective numbers exclude those absent for the whole of any week.
[2] Government opencast operations were begun in 1942.
[3] Additional categories included as workers at the coal face from 1943, causing apparent reduction in average output by about 4 per cent.

TABLE V *Retail Sales and New Supplies of Certain Consumer Goods* (1943=100).

	1938	1944	1945	1945 May June	1945 July Aug.	1946 May June	1946 July Aug.
Index Numbers of Retail Sales.							
Total Sales	96	107	114	112	108	135	129
Food and Perishables... ...	90	105	110	112	109	125	122
Non-Food Merchandise ...	105	109	122	111	107	150	142
Index Numbers of New Supplies for the Home Civilian Market.							
Footwear[1]	(140)	95	96	97	96	122	(118)[6]
Other Clothing[1]	(190)	90	93	90	85	(147)	N.A.
Furniture and Furnishing[2] ...	(420)	124	201	184	185	(412)[6]	N.A.
Hardware[2]	(280)	94	117	106	112	(214)	N.A.
Beer[3]	82	105	109	111	117	107	112
Spirits[4]	107	91	91	88	86	97	102
Tobacco[5]	86	99	105	102	103	111	111

Sources : *Board of Trade Journal* and *Monthly Digest of Statistics*.

[1] Based on coupon values. [2] According to value at pre-war prices.

[3] Based on bulk barrels on which beer duty paid.

[4] Based on proof gallons on which duty paid.

[5] Based on net clearances mainly by manufacturers for home consumption.

[6] These figures are not strictly comparable, since they are based on new definitions of footwear and of furniture and furnishings.

TABLE VI 1. *Retail Prices.*

	General Market Price Index		Ministry of Labour Cost of Living Index[1]				
	1944	1945	1944	1945	1946		
	yearly averages (av. 1938=100)		yearly averages		March	June	Sept.
			(av. 1938=100)				
Food	136	137	120	120½	119½	120½	119½
Rent	102½	103	102½	103½	103½	105	105
Clothing	179½	185	165	166	166	166½	167
Fuel and Light	133½	138	142	150½	152½	153½	154½
Miscellaneous	176	177	166	166½	168½	167½	170
All Items	151	153	129	130	130	130	130

Sources : Cmd. 6784 (weights in current years) and *Ministry of Labour Gazette*.

[1] Based on average figures for two successive months.

2. *Board of Trade Index of Wholesale Prices.*

(1938=100)	1938	1939	1940	1943	1944	1945	1946 Sept.
Basic Materials	100	107	159	187	198	201	208
Intermediate Products ...	100	102	139	164	168	173	190
Manufactured Articles ...	100	99	119	138	141	143	160
All Articles	100	101	138	161	164	167	175
Building Materials	100	101	117	144	147	150	177

Source : *Board of Trade Journal.*

3. *Import and Export Prices.*[1]

(1938=100)	Imports Dec. 1939	Dec. 1945	Apr. 1946	Aug. 1946		Exports Dec. 1939	Dec. 1945	Apr. 1946	Aug. 1946
Food, etc. ...	123	195	203	206	Textiles	110	230	239	254
Raw Materials ...	137	218	227	229	Metal goods ...	102	171	181	190
Manufactures ...	142	177	175	185	Total manufactures	106	186	194	204
Total	130	198	204	208	Total	106	186	192	202

Source : *Board of Trade Journal.*

[1] The indices measure the change in the aggregate value of a representative selection of imports or exports. For methods of calculation see *Board of Trade Journal*, April 13th, 1946.

TABLE VII

Ministry of Labour Index of Wage Rates.[1]

	1944 (yearly averages)	1945 (yearly averages)	1946 April	May	June	July	August	Sept.
Index (av. 1938=100)	142½	149	159	160	161	162	163½	164

[1] Monthly indices based on average rates at end of two successive months.

TABLE VIII

1. Imports of Certain Commodities.

(Thousand tons per month).

Commodity	1938	1945	1946 1st qtr.	1946 2nd qtr.	1946 3rd qtr.
Wheat and Flour...	455	341	324	396	306
Maize and feeding stuffs... ...	411	59	18	12	14
Meat (all kinds)	129	97	114	120	129
Butter	39	16	21	23	17
Fresh fruit and vegetables ...	176	38	69	44	75
Tobacco	13	14	15	18	9
Iron ore[1]	425	340	480	548	598
Cotton[2]	43	32	24	38	21
Wool[2]	23	16	17	15	17

Sources: *Accounts Relating to Trade of U.K. and Monthly Digest of Statistics.*

[1] Other than manganiferous ore.

[2] Retained Imports.

2. Exports of U.K. Produce and Manufactures.

(Index Nos. of Volume).

Class of Article	1938	1945	1946 1st qtr.	1946 2nd qtr.	1946 3rd qtr.
Food, drink, and tobacco ...	100	89	88	86	98
Coal	100	8	14	13	14
Machinery...	100	49	83	104	114
Cotton yarn and manufactures	100	34	43	41	42
Woollen and worsted yarns and manufactures	100	39	76	75	77
Silk and art. silk yarns and manufactures	100	114	145	153	153
Chemicals	100	104	165	160	163
Vehicles[1]	100	23	86	133	154
Total, Articles wholly or mainly manufactured	100	45	91	110	117
Total, all exports...	100	45	84	98	104

Source: *Board of Trade Journal.*

[1] Including locomotives, ships and aircraft.

3. Retained Imports, Exports of U.K. Produce and Balance of Merchandise Trade.

(Monthly Averages).

Value : £ million. Volume Index : 1938=100.	1938	1944	1945	1946 1st qtr.	1946 2nd qtr.	1946 3rd qtr.
Ret. Imports, Value	71.5	107.6	87.6	88.8	101.7	105.0
„ „ Vol. Ind.	100	80	62	63	69	70
Exports, Value	39.2	22.2	33.0	61.4	73.2	80.0
„ Vol. Ind.	100	31	45	84	98	104
Balance, Value	32.3	85.4	54.6	27.4	28.5	25.0

Source: *Monthly Digest of Statistics.*